

## **Dry Powder Cells and Cell Culture Reagents and Methods of Production Thereof**

### **ABSTRACT**

5       The present invention relates generally to nutritive medium, medium  
supplement, media subgroup and buffer formulations. Specifically, the present  
invention provides powder nutritive medium, medium supplement and medium  
subgroup formulations, particularly cell culture medium supplements (including  
powdered sera such as powdered fetal bovine serum (FBS)), medium subgroup  
formulations and cell culture media comprising all of the necessary nutritive  
10       factors that facilitate the *in vitro* cultivation of cells. The invention further  
provides powder buffer formulations that produce particular ionic and pH  
conditions upon reconstitution with a solvent. The invention is particularly  
directed to methods of production of these media, media supplement, media  
subgroup and buffer formulations, and also provides kits and methods for  
15       cultivation of prokaryotic and eukaryotic cells, particularly bacterial cells, yeast  
cells, plant cells and animal cells (including human cells) using these dry powder  
nutritive media, media supplement, media subgroup and buffer formulations. The  
invention also relates to methods of producing sterile powdered media, media  
supplement (particularly powdered sera such as powdered FBS, powdered  
20       transferrin, powdered insulin, powdered organ extracts (such as bovine brain or  
pituitary extracts), powdered growth factors (such as EGF, FGF, etc.) and the  
like), media subgroup and buffer formulations. In a particularly preferred aspect,  
the invention relates to such methods wherein the sterilization is accomplished by  
gamma irradiation. The invention also relates to methods for producing dry cell  
25       powders, comprising spray-drying a cell suspension. The invention also relates to  
cell, media, media supplement, media subgroup and buffer powders produced by  
these methods.